

COLONIAL PARKWAY,
PARKWAY DRIVE BRIDGE
(Route 163 Bridge)
Yorktown vicinity
York County
Virginia

HAER No. VA-48-AA

HAER
VA
100-YORK,
18AA-

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Department of the Interior
P. O. Box 37127
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HISTORIC AMERICAN ENGINEERING RECORD

PARKWAY DRIVE BRIDGE
Colonial National Historical Park
HAER No. VA-48-AA

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100-YORK,
18AA-

Location: Intersection of Parkway Drive (Rt. 163)
and Colonial Parkway, City of
Williamsburg, Virginia.
Quad: Williamsburg, VA
UTM: 18/350525/4126700

Date of Construction: 1972

Type of Structure: Reinforced concrete arch underpass with
brick veneer.

FHWA structure No.: 4290-016P

Use: Separated grade vehicular crossing and
interchange

Designer/Engineer: Region Fifteen, Federal Highway Admini-
stration, U.S. Department of Transpor-
tation, and Eastern Office of Design and
Construction, National Park Service.

Builder: Luke Construction Company, Norfolk,
Virginia.

Owner: National Park Service

Significance: Parkway Drive Bridge was constructed to
provide a separated grade crossing at
the intersection of Route 163 and the
Colonial Parkway. Prior to construction
of the underpass, the grade crossing was
considered one of the more dangerous
intersection because of limited sight
distance. Development northwest of
Williamsburg accounted for increased
traffic which aggravated the problem.
The bridge is typical for this section
of the parkway and is patterned after
the 1966 Miller's Crossing Bridge.

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Project History:

The documentation of the Parkway Drive Bridge is part of the Colonial National Historical Park Roads and Bridges Project, conducted in summer 1995 by the Historic American Engineering Record, National Park Service.

Historian:

Michael G. Bennett, HAER Historian,
1995.

INTRODUCTION

Along with photographs, measured drawings, and an overview history of the Colonial National Historical Park roads and bridges (HAER No. VA-115), individual reports on certain bridges, park tour roads (Jamestown Island Tour Road HAER No. VA-116, and the Yorktown Battlefield Roads HAER No. VA-117), and other structural features of the Colonial Parkway are part of this documentation. These reports provide a more detailed history of a structure's design and construction. Similar documentation for Colonial National Historical Park was completed by HAER in 1988 for the Colonial Parkway (HAER No. VA-48), the Navy Mine Depot Overpass (HAER No. VA-48-A), Capitol Landing Underpass (HAER No. VA-48-B), the C & O Railroad Underpass (HAER No. VA-48-C), and the Williamsburg Tunnel (HAER No. VA-48-D).

CONTEXT

Constructed between 1931 and 1957, the Colonial Parkway is the key transportation feature of Colonial National Historical Park. Crossing the Tidewater peninsula, the road is a scenic link between the "historic triangle" of Jamestown, Williamsburg, and Yorktown--a distance of about 23 miles--designed to provide continuity in the transition from one historical era to another. The Colonial Parkway represents one of the first attempts of the National Park Service to integrate parkway design principles standardized in Westchester County, New York during the 1920s with its own traditions of landscape architecture. Under the initial direction of Charles E. Peterson, chief landscape architect for the Eastern Division of the Branch of Plans and Design, the parkway was constructed to harmonize the scenic qualities of the Tidewater environment with the region's colonial material culture.

Modern highway design and engineering practices were utilized in the construction of the parkway. The alignment of the road is comprised of a variation of spiral and single-centered curves with limited tangents, set in a right-of-way averaging 500' with broad landscaped slopes. Commercial development is prohibited, and access to the road is limited to provide motorists an uninterrupted flow through the landscape thought to be essential

to the historic experience of the park. Extensive "cut and fill" operations were used to create a road with maximum curves of 5° and grades no greater than 5 percent.

The decision to align the parkway along both the York and the James Rivers required the use of hydraulic fill to create a road embankment. Low level concrete slab bridges blend with the sandy areas of fill, providing open views of the rivers and marshes. In the vicinity of Williamsburg, filled spandrel concrete arch bridges with colonial style brick veneer provide separated grade underpasses for federal, state, and county roads. To simulate the character of a "country road," the parkway's pavement was limited to a width of 30' and specially treated to expose the extra large aggregate in the concrete. All of these features, along with interpretive markers, create a roadscape with unity, variety, and character, three common elements of NPS landscape design tradition.

PARKWAY DRIVE BRIDGE

Parkway Drive (Virginia Route 163) intersects with the Colonial Parkway east of Williamsburg between the Route 143 (HAER No. VA-48-L) and Capitol Landing Road (HAER No. VA-48-B) bridges. It was one of the original through streets in the vicinity of Williamsburg given rights of access to the parkway when the right-of-way was acquired. Prior to the construction of the bridge, the at-grade crossing was considered one of the most dangerous along the parkway. Through the 1960s and early 1970s there was an increase in the number of people utilizing Parkway Drive due to development and population growth northwest of Williamsburg.¹ As was noted in the 1964 Master Plan, "The park is in a growing area that is fast becoming urban and suburban

¹Stanley Abbott, Park Superintendent, "Master Plan for the Preservation and Use of Colonial National Historical Park, Mission 66 Edition, April 1961," 6-10, collection of the Colonial National Historical Park.

with resulting pressures and complexities."²

After completion of the parkway in 1957, efforts continued to restrict access to the road. Where access was necessary, most grade crossings were replaced with underpasses and interchanges. Along with providing safer traffic patterns, these projects were designed to enhance the continuity and pleasure of traveling on the parkway so as not to distract from the historical and scenic experience. In 1966, a bridge and interchange was constructed at Miller's Crossing (see HAER No. VA-48-Z) to replace an at-grade separation south of the Williamsburg tunnel. Four years later, another project was planned for Parkway Drive northeast of Williamsburg on the older, 1930s section of the parkway. The dimensions and architectural treatments for both bridges were the same, and their designers adopted the style of earlier bridges on the parkway in the vicinity of Williamsburg.

The contract for Parkway Drive Bridge included the grading, landscaping, and the construction of an interchange and underpass. Plans and specifications for the structure were prepared by the Federal Highway Administration in early 1971, and architectural treatments were prepared by the National Park Service Eastern Office of Design and Construction following the specifications for the Miller's Crossing Bridge. By February the park had received the right-of-way entry from Colonial Williamsburg and a deed of easement from the city.³ Two months later, bids were opened at FHA offices in Arlington, Virginia and the contract was awarded to Luke Construction Company, Norfolk, Virginia on 23 April. A pre-construction meeting, which had become standard by the 1960s, was held in the park on 12 May, and work commenced on 25 May with clearing of the right-of-way and setting up a detour. According to park historian James Haskett, the detour became a nightmare due to the nature of streets in

²George F. Emery, acting superintendent, "Master Plan of Colonial National Historical Park, August 1964," 2, collection of the Colonial National Historical Park.

³James R. Sullivan, Superintendent's Staff Meeting Minutes, February 1971, 3. Collection of Colonial National Historical Park.

Williamsburg. Park visitors had considerable trouble following the auxiliary route to reconnect with the parkway.

Progress on the bridge was slow due to heavy rains during the summer of 1971 which hampered the excavation work and the setting of concrete footings. Difficulty in obtaining "colonial style" brick further delayed completion of the structure. In April 1972, the bridge was 72 percent complete. That same month, park engineer Bill Morgan was transferred to the Natchez Trace Parkway, and replaced by Bob Wiley who took over as project engineer.⁴

Between July and August 1972, the parkway was reopened to single-lane restricted traffic, and normal traffic patterns were resumed on 23 August. A semi-final inspection of the bridge was favorable but noted the need for additional finishing work including shoulder restoration, drainage, pavement patching, and seeding. On 13 September 1972 a final inspection of the bridge was made and the structure was accepted. As was standard practice by the 1960s, the park requested letters of approval from the City of Williamsburg and the state highway department.⁵

The bridge is a typical reinforced concrete, filled spandrel arch clad in "colonial style" brickwork. It has an open span of 51'-8" with a minimum clearance of 14' at the ends of the 30' wide pavement. Sloped pavement extends 5' from the inside face walls of the arch to the 30' wide pavement, creating a gutter for runoff. A series of weep holes along the abutment face walls discharge into the gutter. Abutment corners are detailed with skewback stonework that provides a base for the 2'-8 3/4" brick arch ring. At the center of the arch is a granite keystone, 1'-4" wide at the top and 11" wide at the bottom. The bridge is only 6'-3/8" high from the bottom of the arch ring to the top of the parapet wall, giving the bridge a feel of lightness characteristic of arch bridges along the parkway.

⁴Sullivan, Superintendent's Monthly Meeting Minutes, May 1971-May 1972.

⁵Richard Maeder, Superintendent's Monthly Meeting Minutes, July-September 1972.

Both the north and south abutments were constructed upon a 69' long reinforced concrete footing on three rows of 26 treated timber piles. Abutment foundations are 34'-4 5/8" long, and have three 2' wide diaphragm walls perpendicular to the parkway that are filled with gravel sheathing. The bridge is symmetrical from the centerline of the parkway with 38'-6" arced wingwalls. Both north and south wingwalls were built on stepped footings supported by treated timber piles. On Parkway Drive the parapet walls are 62' apart at the center of the bridge, flaring to 72'-11 7/8" at both approach slabs.

A 5' sidewalk and 2' gutter exist on both sides of Parkway Drive which is 52' wide. A 6" utilities conduit and 6" water conduit are constructed into the bridge's substructure underneath the sidewalks. The 1'-6" wide parapet is 2'-7 1/4" above the grade of the sidewalk, and has two string courses of brick extending 3" beyond the face of the wall. A rounded brick coping runs the length of the parapet wall, terminating at the ends of each wingwall where a more ornamental 3'-5 1/2" square pier is located. The bridge is clad with English bond brick with incised mortar joints. Glazed headers are used in the pattern on the interior vault of the structure. As was standard with bridge landscaping along the parkway, a 2:1 slope was created along all four wingwalls.⁶

Since it is one of the newer structures along the parkway, the bridge has not received any major reconstruction work since its completion in 1972. Considerable leaching, however, has stained much of the bridge white due to the use of a mortar sand with a high salt content. This leaching detracts considerably from the aesthetic qualities of the bridge.

⁶U.S. Department of Transportation, Federal Highways Administration, "Colonial Parkway, Plans as Constructed, Project 1C5, Colonial Parkway-Parkway Drive interchange," collection of the Colonial National Historical Park, Engineer's office, Maintenance Division, Yorktown, Virginia.

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